RNAi Molecules for Therapeutic Applications

Background:

Antimicrobial resistance (AMR) is a major problem worldwide since many of the known antibiotics are becoming ineffective due to evolving pathogens. Pace of developing new antibiotics is relatively slow and there is always a threat of pathogenic organisms getting resistant to the new class of antibiotics. Hence, an alternative approach to tackle the problem of AMR is needed. Boosting skin immunity via release of antimicrobial peptides (AMPs) cocktail is an important approach to combat AMR.

Technology:

KoshKey Sciences Pvt Ltd is developing RNA interference therapies for non-healing diabetic wounds and AMR infections. The company has designed drug molecules, namely antisense oligonucleotides (ASOs) and small interfering RNA (siRNA), which can modulate the expression of specific genes. This modulation leads to accelerated wound healing and the release of antimicrobial peptides (AMPs) from skin cells. The cocktail of AMPs has a more potent and broad-spectrum effect on pathogens compared to antibiotics. This combined approach to healing wounds and tackling skin infections is an important alternative to antibiotics in the treatment of infected non-healing diabetic wounds.

Applications:

- (Diabetic) wound healing
- Antimicrobial resistance (AMR)
- Skin infections

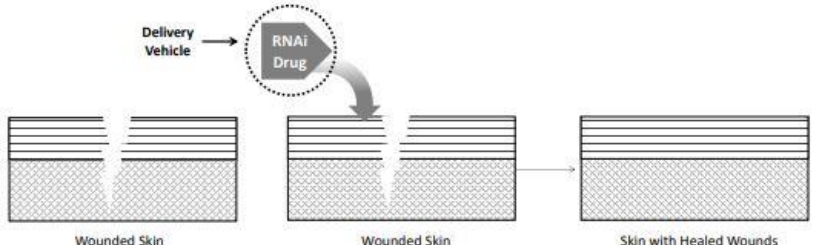

Figure. Representative image showing treatment of wounded skin with RNAi drug

Advantages:

- Endogenous AMP activation
- Induces cocktail of AMPs
- Broad spectrum
- No toxicity or undesirable immune response

IP status:

Provisional Indian application no. 202341022225

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